

**DEPARTMENT OF FISH AND GAME
COMMENTS AND RECOMMENDATIONS
FOR THE STATE WATER RESOURCES CONTROL BOARD'S
FOURTH WORKSHOP TO REVIEW STANDARDS FOR THE
SAN FRANCISCO BAY/SAN JOAQUIN DELTA ESTUARY***

Governor Wilson's April 6, 1992 speech on water policy recognized that "the Delta is broken". Most fish species dependent on the Bay-Delta estuary for food, nursery habitat, and migration route are in decline. Adult striped bass have declined by 70%. Winter-run chinook salmon are less than 10% of their historical abundance while spring-run chinook are down 80% and the fall-run have decreased 50%. Starry flounder, longfin smelt, and bay shrimp populations also are severely depressed. Winter-run salmon and delta smelt have been listed under the Federal and State Endangered Species acts and the Sacramento splittail is likely to receive Federal listing.

Our more than 40 years of research in the Delta has established that many estuarine species are affected by annual water supply and upstream storage which reduces the amount of fresh water flowing through the Estuary. Fishes are particularly affected during their spawning and early nursery period. In general, native and important introduced fish species living within the brackish and freshwater portions of the Estuary exhibit a pattern of increasing abundance in response to higher delta outflow during the winter and spring. Greater freshwater outflows and the associated movement of the salinity gradient downstream clearly benefit the entire estuarine ecosystem.

The "broken" Delta also is affected by the diversion of water from the Delta, especially by the Central Valley Project (CVP) and State Water Project (SWP). These effects include the direct loss of fish entrained in diverted water and disruption of migratory patterns as well as nursery habitat due to altered flow patterns resulting from export of Sacramento River origin water from the southern Delta.

RECOMMENDATIONS

Estuarine Ecosystem -- The Department of Fish and Game (DFG) encourages the Board to establish a long-term goal of restoring, protecting and maintaining a healthy aquatic ecosystem that includes diverse and abundant populations of fishes and invertebrates.

DFG believes that attaining an agreed-upon level of protection will require eventual changes in the Delta facilities used by the CVP, SWP, and other diverters to manage and deliver water. The Governor's Bay-Delta Oversight Council (BDOC) is an appropriate forum for evaluating such changes. Hence, restoration of the ecosystem cannot be achieved entirely within the scope of the triennial review, but must be a principal long-term objective.

* Presented by Perry L. Herrgesell, Chief of Bay-Delta and Special Water Projects Division, July 13, 1994

As we stated during the 1992 hearings (WRINT-DFG Exhibit #8) and during your April 26, 1994 workshop, the interim goal of the present proceedings should be to halt the decline in aquatic populations and at least begin their recovery. This is consistent with Governor Wilson's expectation that the interim standards for the Estuary provide "protection for fish and wildlife". To stop declines and move toward recovery, the Board should initiate efforts now which will lead to a fully functioning, healthy, aquatic ecosystem.

We believe that the Board should consider making immediate progress toward halting decline and starting recovery by setting an interim ecosystem goal of attaining fish population levels that existed during the late 1960s and early 1970s. This goal is consistent with the U.S. Environmental Protection Agency's targeted level of protection of late 1960s and early 1970s habitat conditions. Various alternative standards and means for evaluating the potential of alternatives for achieving our proposed interim goal are provided in WRINT-DFG Exhibit 8, other WRINT-DFG Exhibits, U.S. Environmental Protection Agency proposed standards, winter-run chinook salmon and delta smelt Biological Opinions for CVP/SWP operations, and other documents and files. The Department of Fish and Game is ready to work cooperatively with the SWRCB staff to evaluate the degree of ecosystem protection and restoration potentially achieved by alternative standards that the Board may want to consider.

We recognize that implementing standards to achieve proposed ecosystem goals may impact water project operations. Nevertheless, the fisheries declines have been significant, and as the State's trustee for fish and wildlife, we believe that stemming the ecosystem decline and initiating recovery is essential. Although, as discussed in our June 14, 1994 statement, various other factors also influence fish populations in the Estuary, a more than 4-decade data bank, all the way back to pre-CVP evaluations by DFG and U.S. Fish and Wildlife Service (USFWS) biologists, points to water project operations as being the crux of the problem. Thus, corrective actions must focus on water management.

Striped Bass Spawning -- as in WRINT-DFG-Exhibit 8, we recommend that the SWRCB adopt the striped bass salinity standards as provided in the 1991 Water Quality Plan.

Fish Facilities -- Table II of Decision 1485 includes a set of operating standards for the fish protective facilities in the Delta. These are detailed standards specifying facility characteristics such as screen approach velocities and bypass ratios for specific time periods to protect striped bass, salmon, and white catfish. As stated in WRINT-DFG-Exhibit 8, for a number of reasons the DFG believes that these standards should be revised.

do not recommend adoption of SB standards proposed by EIA in its federal promulgation

DFG believes that the present Decision 1485 fish facility operating standards do not reflect up-to-date thinking about Delta fish protective needs and that the adoption of rigid standards, such as the present Decision 1485 standards, are bound to be unresponsive to year to year differences in Delta fishery resource conditions. For example, the present standards specify SWP facility operating conditions that are primarily intended to protect chinook salmon from November 1 through May 14 and striped bass from May 15 through October 31. These specified time frames are generally accurate for providing optimal protection for the two species, but not in all years. During some years large losses of striped bass and delta smelt

occur in late fall or winter when relatively few salmon are present. In years when this occurs it may be desirable to modify the standards to provide additional protection for these species.

Rigid fish protective facility standards are unlikely to meet changing future delta fish protective needs. In recent years increasing emphasis has been placed on the protection of species in addition to striped bass and salmon, such as the Threatened delta smelt, a trend that is likely to continue. As research to identify the fish protective facility operating needs of new species of concern moves forward it will be necessary to integrate new operating standards into facility operations. Optimization of standards will be difficult with multiple species of concern and will likely require close monitoring of the relative abundance of entrained fish species.

New fish collection facilities recently have been added at the SWP and yet-to-be determined modifications will soon be made to the CVP fish protective facilities. It will be necessary to develop new operating standards for the two facilities to take into account the facility modifications.

In response to the issues expressed above, as in WRINT-DFG-Exhibit 8, DFG proposes that the Decision 1485 fish facility operating criteria be replaced by the following language:

"The fish protective facilities associated with the State Water Project and Central Valley Project export facilities will be operated to optimize the protection of Delta fishery resources, as determined by the California Department of Fish and Game, consistent with export rates and facility maintenance needs. Should the Bureau of Reclamation (USBR) or Department of Water Resources (DWR) consider Fish and Game specifications to be unreasonable, they may request relief from the Executive Officer of the Board and the Executive Officer may grant relief, provided that such relief is supported by written findings."

Adoption of a standard such as this obviously creates the need for closer coordination between DFG and the USBR and the DWR. DFG proposes to develop this coordination and a specific plan for implementing the standard through negotiated agreements between the agencies.

Biological Opinions and Consultations -- We would like to reiterate our May 16, 1994 statement on Biological Opinions issued by the National Marine Fisheries Service (NMFS) and the USFWS. In conformance with the California Endangered Species Act, DFG has adopted the NMFS opinion for winter-run salmon, and is considering adoption of the USFWS opinion for delta smelt. These opinions establish reasonable and prudent alternatives (RPAs) to existing project operations to avoid jeopardy and reasonable and prudent measures (RPMs) to minimize take. These RPAs and RPMs restrict CVP and SWP operations more than D-1485 since the aforementioned species' declines continued under D-1485 standards.. These Opinions were based on the best available information and, as additional information becomes available, they can be modified. Currently, the NMFS, USFWS, and DFG are in re-consultation with the DWR and the USBR regarding effects of their project operations in the

Delta on winter-run chinook salmon and delta smelt. As your decision concerning standards will apply to others besides the CVP and SWP, the scope of your reasonable protective measures should yield estuarine habitat of sufficient quantity to restore and sustain species so current threatened and endangered species can recover, and the need for listing other species can be avoided.

We will use RPAs from the existing biological opinions on the SWP and CVP as part of the basis for developing our Biological Opinion on the SWRCB Decision. This Opinion, and any standards that you may adopt in this proceeding, may need to be modified if future opinions on the SWP and CVP require more stringent measures.

Instream Flow and Temperature Criteria for Upstream Tributaries -- We addressed this issue in our June 14, 1994 statement. As stated then, actions to improve fisheries habitat, including increased instream flows in tributaries, are an essential part of the overall restoration of the Bay-Delta estuary and Central Valley fisheries. In recognition of this, the DFG prepared a Central Valley Action Plan which recommends various habitat restoration measures. The recommendations we consider to be the most important, relative to these proceedings, are the proposed increases in instream flow and the temperature criteria for the different rivers. These recommendations are summarized in Table 3 on pages 9 through 16 of the Action Plan. DFG flow recommendations were also presented in the draft California Water Plan in Table 8-3. We prepared graphs on pages 22-29 of our June 14 statement summarizing our recommendations for the various rivers. These graphs depict the range of currently required flows and the DFG proposed flows. In addition, there are flow fluctuation and water temperature conditions DFG would like to see implemented.

The recommendations for the Yuba and Mokelumne rivers are already being considered by the SWRCB in other hearings and the SWRCB should be scheduling a hearing for later this year where the DFG recommendations for the Merced River will be presented. Action by the SWRCB in these proceedings could include integration of the results of the hearings on the Yuba, Mokelumne, and Merced rivers into the Bay-Delta process.

Methodology to Require Diverters Other Than the SWP and CVP to Provide Their Fair Share -- The current allocation of Delta outflow responsibility, which depends primarily on storage on the Sacramento, American, Feather rivers, and to a lesser extent on the Stanislaus River, has clearly contributed to the ecological imbalance of the Bay Delta Estuary. In order to restore the ecosystem's productivity, we must look at the system as a whole. As the new standards for the Bay Delta are crafted, the SWRCB should develop a methodology to require diverters other than the SWP and CVP to provide a "fair share" contribution to Delta outflow. In WRINT-DFG Exhibit No. 30, we provided some suggestions regarding methods that could be used to allocate Delta outflow requirements.

One approach would be to designate a volume of storage in each reservoir over a certain size for use in meeting Delta standards. The amount of water from each source could vary by water year type and may also be related to other factors such as total storage capacity or a ratio of storage to unimpaired flow. Other factors related to fisheries habitat include

carryover storage needs and relative inadequacy of current flow requirements. Water rights and priority considerations are also obvious issues. DWR and USBR could be given the discretion to call for the water to be released as needed up to the amount required to meet Bay-Delta standards.

Another method which could be considered is to model the expected hydrology of the Central Valley using the recommended flows proposed in the DFG Action Plan and summarized here today. This model run could reveal if and when additional flows are needed to protect the Bay Delta Estuary. The SWRCB could then assign additional outflow requirements to the various tributaries based on the ratio of unimpaired flows in the various tributaries.

We suggest that the SWRCB consider these and other alternatives in allocating responsibility to meet Delta outflow among all water users. This will ensure that the Delta is managed as an ecosystem and that the water needs to protect the Delta do not deplete upstream storage on any river to the point where salmon runs downstream are adversely affected by high water temperatures.

Mechanism to Allow a Third Party to Acquire Water to Provide Additional Protection --
One additional concept the SWRCB should consider including would be a mechanism that allows a third party to acquire water to provide additional protection above the Bay-Delta standards which may be set. Under Water Code Section 1707, existing water users can petition to change their place of use and purpose of use to benefit fish and wildlife even if that change does not involve diversion of water. When we have considered using this code section to provide for Delta outflow, there has been some question about whether the existing regulatory strategy in D-1485 would allow for dedication of additional water for outflow above the standards set in D-1485. The new Delta standards should include a mechanism that allows acquisition of additional water to provide for improved flows in the Delta over and above the standards. We recognize that there may need to be some minimum quantity set because of the difficulty of measuring relatively small amounts of water in the Delta.

Other Recommendations --

- When evaluating alternative standards, consider requiring export rates to be a function of the concurrent amount of delta outflow -- higher outflows allow greater exports.
- Standards that improve environmental conditions over those provided by Decision 1485 should be implemented immediately. Implementation should not be delayed until the adoption of a water rights decision.
- The SWRCB should not rely on other protective measures to counteract impacts of water development. Impacts of the present water management system are so overpowering, that fisheries restoration is infeasible without major changes in water management. Longer-term planning efforts could possibly integrate other measures with more environmentally sensitive water management approaches.

- **Standards should not allow benefits gained through appropriate inflows, outflows and reduced exports early in the year to be diminished by subsequent low flows and high exports. ____**
- **Monitoring and evaluation of ecosystem effects should be required to prove benefits of any adopted standards or facilities such as channel barriers.**

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